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REPORT OF THE
EXPERT CONSULTATION FOR ESTABLISHING A
SUBREGIONAL MAIZE RESEARCH INSTITUTE FOR
EASTERN AND SOUTHERN AFRICA (LUSAKA) MULPOC

LUSAKA, ZAMBIA 22 - 26 AUGUST 1983

INTRODUCTION

1. The Expert Consultation Meeting for Establishing a Subregional Maize Research Institute for Eastern and Southern African States was held in Lusaka, Zambia from 22-26 August 1983. The Consultation Meeting was convened to consider the feasibility study for establishing a Subregional Maize Research Institute for Eastern and Southern African States in accordance with the decision of the sixth meeting of the Lusaka-based ECA/MULPOC Council of Ministers held in Mbabane, the Kingdom of Swaziland in March 1983. The project for the Establishment of a Maize Research Institute for Eastern and Southern Africa, was first adopted by the Third Meeting of ECA/MULPOC Council of Ministers which was held in Gaborone, Botswana from 28-29 January 1980, which requested the ECA to undertake a study to determine the feasibility of developing a subregional maize research institute.

Opening of the Consultation

2. The Expert Consultation meeting was opened by the Acting Permanent Secretary of the National Commission for Development Planning in Zambia. In his opening statement Dr. E.C. Kaunga stressed the importance of maize as food in the subregion and the need for concerted effort to achieve food self-sufficiency. He stated that improvement in maize production will have to come, not so much from increasing areas under production, but rather through an increase in yield per unit basis. This can be achieved through the introduction of improved and better adapted varieties and appropriate cultural practices designed not only to exploit the productive capacity of the soils but also to maintain soil fertility.

3. He further stated that maize yields in the subregion average between 0.80 and 1.30 tonnes per hectare and this figure is about 20 percent of that obtained by all developing countries and 12 and 17 percent of maize yields achieved in developed countries and North America respectively. He also mentioned the fact that the subregion while having high potential for increasing productivity is now a net importer of maize causing severe drain on the meagre foreign exchange reserves. He expressed the need to develop research programmes particularly tailored to the needs of small farmers which constitute the majority of the maize producers.

4. Mr. S.A. Ochola, Acting Director of the Lusaka MULPOC also made opening remarks on behalf of ECA. In his statement he indicated that the study was undertaken in response to the request of the Lusaka MULPOC Council of Ministers at its meeting in Gaborone, Botswana on 28 and 29 January 1980. He also expressed his gratitude to the USAID for financing the study.

Attendance

5. The meeting was attended by experts from Kenya, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe. The African Development Bank (ADB), the International Institute for Tropical Agriculture (IITA), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP), and the USAID were also represented. (List of participants is shown in Annex).

Agenda

6. The Provisional Agenda was adopted without any change as follows:

(1) Opening of the Expert Consultation

(2) Adoption of agenda

(3) Status of maize production, consumption and research in the subregion (general)

(4) Activities and research programmes of the Institute

(5) Organization, staffing and management of the Institute

(6) Investment requirements and mode of financing of the activities of the Institute

(7) Discussion of the project document

(8) Discussion of the draft agreement

(9) Adoption of the report of the Consultation

(10) Closing of the Expert Consultation

Election of the Bureau

7. The following were elected to constitute the Bureau:

Zambia	-	Chairman
Zimbabwe	-	Vice-Chairman
Kenya	-	Rapporteur

Account of Proceedings

8. The representative of the Secretariat and the Consultant introduced the subject matter. A brief account was made of the origin of the study, the importance of maize to the subregion, the deterioration of the food situation in the subregion, trends in maize production, current maize improvement programmes in the subregion and the activities of the proposed Maize Research Institute.

9. The participants, while supporting the proposal to establish a sub-regional Maize Research Institute in principle, questioned the role the Research Institute would play in solving the needs of the small farmers who produce the major proportion of the total output of maize, the role of the proposed Institute visa-a-vis that of National Research Institutions, the heavy emphasis the proposal gives to research and development of hybrid maize, in particular as opposed to population improvements. The need to improve the agricultural input delivery system and transfer of technology to the small farmers, as well as improve infrastructural facilities to take advantage of the results of research were also emphasized. In view of the high cost involved the participants mentioned the need to determine the benefits and costs of establishing the Institute. In revising the document it was also suggested to consult the SADCC proposal for the Sorghum and millet improvement programme. The delegates unanimously expressed their support for the establishment of the Institute.

Status of maize production, consumption and research in the subregion (general) (Agenda item 3):

10. In introducing this agenda item the Secretariat indicated the predominance of maize in the diet of the population of the subregion and the area devoted to its production. It was also indicated that in spite of efforts to increase productivity maize yields have remained stagnant for the last 20 years. The subregion is not self-sufficient in maize. To cover these deficits, increasing amount of cereals of which maize constitutes the largest proportion, are being imported at high cost with serious implications on foreign exchange reserves and future development. Unless productivity is increased significantly by the year 2000 deficits will amount to 3 million tons estimated to cost US$400 million per year.

11. It was also stated that the subregion has not been able to exploit its potential for maize production, for various reasons among which lack of improved maize variaties is predominant (only 12 percent of the total area under maize is presently sown with improved seed).

12. With respect to maize consumption it was stated that the subregion is second only to Central America and use of maize other than human food is negligible. The Secretariat further indicated that national maize improvement programmes are at present at a low level of development and that suitable varieties are still unavailable even in countries where hybrid maize development is at an advanced stage. Hence, the rationale for putting emphasis on hybrid maize development.

13. A number of experts felt that too much emphasis has been placed on hybrid maize research and development. They indicated that without complementary inputs and services, improved seed alone will not solve the problem of low production. It was further stressed that there are several factors contributing to low yield and such factors should be treated comprehensively

in the report. On the other hand, although the contribution of other factors to low yield were recognized, some delegates felt that they fall within the realm of national policy and the solution involves national political decisions.

14. After considerable discussion the participants agreed to include in the report the following major constraints to maize production:

(1) Inadequate support (including finance) to national research programmes;

(2) Lack of suitable hybrids and other improved varieties for the different agro-ecological zones;

(3) Recurrent drought;

(4) Inadequate rainfall (in both intensity and distribution);

(5) Prevalence of diseases and pests;

(6) High post-harvest grain losses due to lack of appropriate storage;

(7) Inappropriate farming systems (cultural practices such as plant population, time of planting, fertilizer rate etc.);

(8) Lack of seed production and distribution systems;

(9) Inappropriate marketing and pricing policies for both farm outputs and inputs;

(10) Lack of credit and proper timing of input delivery;

(11) Inadequate extension service; and

(12) Poor co-ordination of extension and agricultural research services.

Activities and research programmes of the Institute (Agenda item 4):

15. The Chairman explained the procedure to be followed in the deliberations of the topic after which the Secretariat introduced the subject. Following that, the participants discussed in detail the broad objectives of the Institute and agreed to modify it as follows:

Objectives and main activities of the Institute

16. The objectives of the Institute and its proposed activities will consist of the following:

(a) The functions of the Institute will be first and foremost to supplement and complement national programmes;

(b) To organize and conduct maize research on breeding, production, consumption and utilization for all member States;

(c) To organize and conduct related educational and training activities for scientific and extension personnel for conducting national maize research and extension development programmes in each of the member States;

(d) To establish, strengthen and improve mutual co-operation between the Institute and national maize research programmes and other activities related to maize crop production, consumption and utilization;

(e) To undertake studies on ecological and socio-economic and other conditions for maximum possible maize production and most rational maize utilization in the subregion;

(f) To liaise with other international organizations with relevant interest in maize production, consumption and development in Africa.

Research Activities, Programmes and Projects

17. Under paragraph 96 of document ECA/MULPOC/LUSAKA/AGR/2, it was agreed to modify the research activities of the Institute to be oriented to the following priority programmes:

(a) On a short-term basis a comprehensive investigation, analysis and study of the agro-ecological conditions for maize production in the subregion;

(b) Comprehensive maize breeding programme which will lead to the development of hybrid varieties;

(c) Maize production technology development research with emphasis on small-scale farmer technology;

(d) Research into maize seed production and distribution problems, and

(e) Collection and dissemination of information on maize research and utilization.

Agro-ecology research

18. Under this topic all the projects were accepted as in the proposal with the understanding that the studies will be completed in 2 to 3 years mainly through the use of consultancy services.

Collection, classification, evaluation and maintenance of local open-pollinated maize varieties and establishment of maize germ-plasm centre

19. The proposals were accepted as outlined in the report with a recommendation that the Institute investigate possibilities of co-operation with the Ethiopian Genetic Resources Centre with a view to utilizing existing facilities. It was also suggested that for ease of reference and understanding this and related projects be placed properly, under the major research programme "Comprehensive maize research leading to development of hybrid varieties."

Hybrid maize development research programme

20. While the specific projects were accepted as proposed, it was however recommended that IITA take the responsibility to rewrite this section in particular, and the whole report with the view of improving its presentation and reducing the size of the document ECA/MULPOC/LUSAKA/AGR/2 and send the revised report not later than end October to ECA for circulation to the member States for their comment and further review before presenting it to the Council of Ministers meeting in early 1984.

21. Under this item it was further agreed to emphasize the mid-altitude ecology maize breeding programme with satellite sites to cater for the need of other ecologies, mainly low and high altitude and off-season breeding.

22. The specific projects proposed i.e. early maturity hybrids, medium maturity hybrids, and late or full season hybrids were accepted as proposed but the participants felt that at this stage of development breeding for quality does not merit priority and therefore be deleted from the list for the first phase of the project.

Maize production technology

23. The participants felt that most of the projects suggested are location specific and should therefore be undertaken by national programmes. However, it was agreed that the Institute concentrate on the development of maize production technology suitable to small-scale farmers and the investigation of ways and means of transferring such technology to the small farmer. It was also recommended that the proposed staffing include a Farm Management Economist to be fully integrated in the research activity of this section.

Seed production research

24. All the projects proposed under this item were accepted as in the report with amendment to item in paragraph 125 (d) of document ECA/MULPOC/LUSAKA/AGR/2 as follows: "To study and recommend uniform methodology and standards of maize seed quality testing and certification and to work on methodology improvement."

Economic research programme

25. Under this item the question of location specificity of socio-economic research was raised and it was suggested to include such programmes in national activities. The projects in the proposal were, however, accepted without change.

Laboratories and services

26. This was accepted as proposed.

Experimental farm

27. The participants felt that one thousand hectare of arable land would be too much for this purpose. But in the interest of flexibility, in future, it was agreed to look for land area which would range from 500 - 1000 hectares.

Education and training activities

28. It was agreed that education and training is important, if not, the most important activity of the Institute. It was further observed that the training programme as proposed was inadequate and its scope be broadened to include short-term training as well as training for professional maize breeders. As a result the following recommendations were made:

(1) To include short-term training programmes for middle level technicians 1 - 3 months;

(2) To include production and extension training with a duration of 3 - 6 months;

(3) On-the-job training for high level scientific staff up to a duration of one year;

(4) Also to have provisions for short seminars and workshops on specific issues (topics);

(5) To undertake co-operative training programmes with universities whereby students would take theoritical training at a university and conduct their research at the Institute.

Location

29. The criteria proposed were accepted with the exception of paragraph 175 which was deleted. The mid-altitude ecology was also defined as ranging from 1000-1500 meters above sea level. Regarding location the experts felt that Zambia, Zimbabwe, Malawi and Kenya will fit the criteria suggested.

Organizations, staffing and management of the Institute (Agenda item 5):

30. Under this item concerns were expressed as to the high initial cost involved in establishing the Institute. In order to make it attractive to donors it was suggested to scale down the activities of the Institute.

31. For the first three years it was therefore agreed to concentrate on breeding and training programme and skeleton staff to be included for production technology research. Accordingly the following staff were recommended.

Table 6: Staff number, qualification and responsibility for hybrid maize varieties development (first 3 years)

Scientific	Responsibility	No.	Qualification
Maize Breeders	Programme Co-ordinator	1	Ph.D. degree (in Plant Breeding)
	Project team leaders	3	Ph.D. degree (in Plant Breeding)
	Assistant maize breeders	4	Ph.D., M.Sc. and B.Sc. (in Plant Breeding)
Maize Plant Protection Specialist	Phytopatholorist	2	Ph.D. and M.Sc. degree (Pathology)
	Entomologist	1	Ph.D. and M.Sc. Degrees
Other Specialists	Maize Plant Physiologists	1	Ph.D. and M.Sc. degree

32. For the education and training programme and production technology research the recruitment of the following scientific staff was recommended during the first phase of the implementation of the project:

(a) Education and Training Programme

Co-ordinator	1
Agronomist	1
Breeder	1
Extension specialist	1
Total	4

(1) Maize Production Technology Research

Programme Co-ordinator	1
Scientists	2
Farm Management Economist	1
Total	4

Technicians

33. It was recommended to employ 2 Technicians and 4 - 6 field workers, per scientist.

Phase 2

34. The experts recommended to hold a review meeting of the activities of the Centre before the end of the first phase and to implement all the activities of the Centre as recommended in the feasibility report during phases 2 and 3.

Management Staff - Phase I

35. After considerable discussion the experts agreed to recommend the following management staff during the first phase:

Title	No.	Acceptable Minimum Qualification	Years of Experience	UN Level Equivalent
1. Director-General	1	Ph.D. Science/ Agriculture or agro-Economics	12 in research or research related administration	D2
2. Director Research	1	Ph.D. Science/ Agriculture	10 in Maize Research	D1
3. Director Administration	1	M.A. or M.Sc. in Administration	8 in administration	P4
4. Farm Manager	2	M.Sc. Agronomy	8 farm experience	P4
5. Maintenance Engineer	1	M.Sc. Engineering	8 related experience	P4/P3

Organization and Management

36. The proposals in the report were accepted with the following amendments:

(1) Under Policy and Advisory Bodies paragraph 139 of document ECA/MULPOC/LUSAKA/AGR/2 to include "donors as members of the Governing Council".

(2) Under Technical Advisory Committee paragraph 141 of document ECA/MULPOC/LUSAKA/AGR/2 to include in the membership "the African Development Bank (ADB)".

(3) Under Research and Training Committee paragraph 142 of document ECA/MULPOC/LUSAKA/AGR/2 to replace the phrase "all Directors of National Agricultural Research Institutions" by "Technical Representatives of National Maize Research Programmes and in the same paragraph to include "CIMMYT as a member in the Committee".

Fixed Investment

37. It was decided to adopt the estimates for the first phase as shown in table 13 of the document ECA/MULPOC/LUSAKA/AGR/2 reproduced below:

Fixed Investment for first three years (Phase 1)
(in thousand US$)

TYPES of Investment	First year	Second year	Third year	Total
1. Land development, office buildings and machinery	750	750	1200	2700
2. Facilities for research and training	750	1500	3500	5750
3. Development of residential facilities	1200	1200	2000	4400
Total	2700	3450	6700	12850

Current and annual cost estimation

38. The consultation adopted the following schedule of current expenses:

				US$
(a)	Director-General and Assistant Director-General	(95,000 + 35,000)	=	130,000
(b)	Salaries of management and scientific staff	20 x 65,000	=	1,300,000
(c)	Technicians and other staff salaries	60 x 10,000	=	600,000
(d)	Trainees - (a) long-term training	22 x 12,000	=	264,000
	(b) short-term training (work-shops, seminars etc etc)		=	264,000
(e)	Permanent employed workers - all kinds	70 x 3,000	=	210,000
(f)	Seasonal or part-time employees and workers	(rough estimate)	=	100,000
(g)	Research support US$ 60,000 per scientist	20 x 60,000	=	1,200,000
(h)	Consultancy			200,000
(i)	Contingency 10%			401,800
		Total		4,419,800

Implementation of Programmes of the Institute

39. The experts endorsed the recommendation of the study team to sub-contract the implementation of the research programme of the Institute to IITA for a fixed period of time. However, the expert from Malawi expressed reservation on this issue.

Discussion of the project document (Agenda item 7)

40. Under this agenda item the participants recommended that the Secretariat revise the project document as amended by this consultation meeting.

41. The participants discussed in details, the model of financing of the Institute and member States contribution. While the financing of the Institute will greatly depend on outside contribution the participants felt that each member State should endeavour to contribute a certain amount of resource based on GDP originating from agriculture and area under maize.

42. It was further recommended to apportion this contribution in such a way that two-thirds of the contribution would go towards the support of national maize programmes and one-third to the subregional institution.

Discussion of the draft agreement (Agenda item 3)

43. The participants recommended to change the name of the Institute to "Maize Research Centre" instead of the "Maize Research Institute". The participants further recommended that the preamble in paragraph 1 be amended to read as follows, "the Governments on whose behalf this agreement is signed; considering the necessity of accelerating the development of the improvement and expansion of cereals in general and maize production in particular ...." The rest of the articles were accepted as in the draft agreement.

Adoption of the report of the Consultation (Agenda item 9)

2 September 1983
TM/mb

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